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## UNIVAIR®

### SERVICE BULLETIN NO. 33

### FUEL SHUT OFF VALVE POSITION INSPECTION

DATE: March 5, 2012

Revision A

SUBJECT: Inspection of fuel shut off valves to ensure positive flow.  
Inspection of fuel quantity indicators for proper operation.  
Inspection of fuel tank venting/non-venting for proper operation.

MODELS AFFECTED: All Ercoupe 415-C, 415-CD, 415-D, 415-E and 415-G aircraft.  
All Forney F-1 and F-1A aircraft.  
All Alon A-2 and A-2A aircraft.  
All Mooney M10 aircraft.

COMPLIANCE: Inspection is required prior to further flight. Continued inspections are required at every 100 hour/annual inspection.

#### STATEMENT OF DIFFICULTY:

There have been field reports of the wing tank fuel shut off valve, located inline prior to the fuel pump, being left in the "Closed" position during engine run-up and flight. Fuel shut off valves left in the "Closed" position will limit the amount of fuel reaching the engine to that amount remaining in the fuselage tank. The engine will cease to function properly upon fuel starvation resulting in possible damage to the aircraft and possible injury to the pilot and/or passenger.

This Service Bulletin requires the visual or tactile examination of the wing tank fuel shut off valve and the main fuel shut off valve to insure that both valves are open prior to every flight. It requires the manual operation and verification of proper operation of both the wing tank fuel shut off valve and the main fuel shut off valve at every 100 hour/annual inspection.

## PROCEDURE:

### A. Wing Tank Shut Off Valve:

1. Ensure clear and permanent access exists to the wing tank shut off valve. The valve is located on the right side of the cockpit, below the instrument panel along the fuselage skin. Remove any soundproofing or interior paneling that prohibits clear access to the valve.
2. Visually inspect valve handle to ensure it is *inline* with the aluminum fuel line. This is the "Open" position.
3. Manually operate valve by turning handle 90 degrees to the aluminum fuel line. This is the "Closed" position. Return valve handle to the "Open" position as explained in Procedure 2 above. If valve leaks or handle does not operate in a smooth manner, Univair recommends replacing the existing fuel shut off valve with a new or used serviceable unit.
4. This wing tank fuel shut off valve must remain in the open position. Type design data requires that it be secured in the open position with a single strand of .032 brass safety wire. The valve should only be closed in case of an engine compartment fire or other emergency situations.
5. Verify proper operation (per procedures 2 – 4 above) of the wing tank shut off valve one time upon the receipt of this Service Bulletin and at every 100 hour/annual inspection thereafter. Make a logbook entry stating that Ercoupe Service Bulletin No. 33, Revision None (or later revisions) has been complied with. Insure that the wing tank fuel shut off valve is in the "Open" position prior to every flight.

### B. Main Fuel Tank Shut Off Valve:

1. Ensure clear access exists to the main fuel (fuselage) tank shut off valve. The valve is located beneath the tank to the left of center of the instrument panel.
2. Visually inspect valve handle to ensure it is *inline* with the aluminum fuel line. This is the "Open" position.
3. Manually operate valve by turning handle 90 degrees to the aluminum fuel line. This is the "Closed" position. Return valve handle to the "Open" position as explained in Procedure 2 above. If valve leaks or handle does not operate in a smooth manner, Univair recommends replacing the existing fuel shut off valve with a new or used serviceable unit.
4. This main fuel tank shut off valve must remain in the open position during all operations. It should only be closed while the aircraft is not being operated.

5. Verify proper operation (per procedures 2 – 4 above) of the main fuel tank shut off valve one time upon the receipt of this Service Bulletin and at every 100 hour/annual inspection thereafter. Make a logbook entry stating that Ercoupe Service Bulletin No. 33, Revision None (or later revisions) has been complied with. Insure that the main fuel tank shut off valve is in the “Open” position prior to every flight.

C: Fuel Quantity Indicators:

1. Visually inspect all fuel quantity indicators for proper operation and indication. Replace any indicators that are not functioning correctly.
2. Make a logbook entry stating that Ercoupe Service Bulletin No. 33, Revision None (or later revisions) has been complied with.

D: Fuel Tank Venting:

1. Visually inspect all fuel caps and venting for proper operation. Verify that the correct fuel cap is installed on the fuselage (main) fuel tank and wing tanks for the specific model aircraft. See Appendix A of this Service Bulletin for additional information regarding model applicability.
2. Make a logbook entry stating that Ercoupe Service Bulletin No. 33, Revision None (or later revisions) has been complied with.

INFORMATION AND PARTS AVAILABILITY:

Copies of Aircraft Flight Manuals, Owners Manuals, Service Memos, and/or Service Bulletins mentioned for Aircraft models listed in Ercoupe Service Bulletin No. 33 are available from Univair Aircraft Corporation.

Contact Univair Aircraft Corporation for availability and pricing of replacement fuel system parts discussed in this service bulletin.

## APPENDIX A

### Additional Information Regarding Ercoupe Model Applicability and Fuel System Arrangements

The 415-C model (S/N 0001 thru 4423) had several fuel tank arrangements resulting from the “progressive evolution” of the fuel system throughout its production history. These changes also affected the fuel venting and piping. Ercoupe Service Memo 31 describes some of this factory fuel system evolution in detail. These fuel system variations have also come from owner/operator field modifications over the years

Erco modified the fuel system of approximately 120 415-C models subsequent to the introduction of the 415-CD fuel system. (Beginning at S/N 4424). These affected Erco modified aircraft will have a data plate stating the following:

ERCOUPE MODEL 415-CD  
SERIAL No. XXXX  
MODIFIED BY  
ENGINEERING & RESEARCH CORP.  
[ DATE ]  
PRODUCTION CERTIFICATE No. 17  
TYPE CERTIFICATE No. A718  
ENGINE - CONTINENTAL H.P. 75  
LICENSED UNDER U.S. PATENTS  
NOS. 1,848,037 AND 2,110,516

Please note the word **MODIFIED**.

The instrument panels of these aircraft were also modified by Erco converted aircraft to include the quadrant assembly 415-51124 and are characteristic of these modified aircraft. Additionally, the fuel systems will include items 12, 13 and 14 of the Ercoupe Parts Catalog, Fig. 20. The owners of these Erco modified Ercoupes should refer to the fuel system diagram from the FAA approved Flight Manuals for the 415-D, E or G. **Wing tanks use unvented caps.**

415-C wing tanks changed from Ternplate to aluminum beginning with S/N 2623. Per Ercoupe Service Memo 39, “production” aluminum tanks have been retrofitted to Ercoupes S/N 813-2622 in the field. Ercoupe Service Memo 50 and Type Certificate A-718, Item #108, allows for the replacement of original production fuel tanks with aluminum tanks (available after 6/1/47) for easier replacement of S/N 813-2622 Ternplate tanks. This particular serial number range has the greatest variation to piping and fittings installed. There are no aluminum tanks for S/N 0001-0812.

Ercoupe Service Memo 43 describes multiple “evolutionary” changes to the aluminum fuselage tank, wing tanks and associated piping and fittings from S/N 2623 through S/N 4423. Beginning with S/N 3468 the overflow line from the fuselage tank to the left wing tank was increased in size. The fuel diagram in the Ercoupe Instruction Manual is schematically accurate for all Ercoupes

0001-4423 (as originally manufactured) except that the single overflow line from the fuselage tank and the wing tanks fuel gauge was relocated from the right wing tank to the left wing tank on S/N 2623 and later. There were only a few factory built 415-D models. Most 415-D aircraft were converted from 415-C models. Modification of the fuel system is not required when performing this conversion. **All Ercoupe fuel systems with a single fuselage tank overflow line to either wing tank require vented wing tank caps, P/N 415-48073.**

**All Ercoupes with separate return/vent lines connecting each wing tank to the fuselage tank or a tee fitting out of it require unvented wing tank caps. This includes all “production” 415-D Models (S/N 4424 and 4435), 415-CD Models, and 415-E & G Models, all Forneys, Alons and M10s require unvented wing tank caps.**

Aircraft	Orig. S/N Range Applicable on S/N	Tank Part Number Material / Nominal Capacity	Tank Avail.	Measured Capacity / Replacement Tank	Original Fuel Cap	Replacement Cap	Vented
Ercoupe	0001-0822	415-48028-L/R (Wings) Template - 9 gallon	No	415-48083-L/R (NLA)	415-48048-2 (NLA)	<b>415-48073</b> Currently Available	Yes
Ercoupe	0001-2469 0001-2622	415-48025 (Fuselage) Template 5 gallon	No	415-48025 (NLA)	415-48048-1 (NLA)	<b>415-48186</b> Currently Available	Yes
Ercoupe	None 0001-2622	415-48083-L/R (Wings) Stainless 9 gallon	No	8.54 gal.-Ercou Memo 9-24-46 None	<b>415-48073</b>	<b>415-48073</b> Currently Available	Yes
Ercoupe	2469-2622 0001-2622	415-48025 (Fuselage) Stainless 5 gallon	No	5.66 gal.-Ercou Memo 9-24-46 None	415-48057 (NLA)	<b>415-48186</b> Currently Available	Yes
Ercoupe	2623-3467 Refer to ESM 43	415-48128-R/L (Wings) Aluminum 9 gallon	No	8.67 gal.-Ercou Memo 9-24-46 415-48187-L/R (NLA)	<b>415-48073</b>	<b>415-48073</b> Currently Available	Yes
Ercoupe	2623-3220 Refer to ESM 43	415-48120 (Fuselage) Aluminum 6 gallon	No	6.72 gal.-Ercou Memo 9-24-46 <b>U-415-48145 Available</b>	415-48057 (NLA)	<b>415-48186</b> Currently Available	Yes
Ercoupe	3221-3467 Refer to ESM 43	415-48135 (Fuselage) Aluminum 6 gallon	No	<b>U-415-48145 Available</b>	415-48057 (NLA)	<b>415-48186</b> Currently Available	Yes
Ercoupe	0813-2622 Refer to ESM 50	415-48197-L/R (Wings) Aluminum 8 gallon	No	7.7 gal.-TC A-718 Item 108 None	415-48057 (NLA)	<b>415-48186</b> Currently Available use in both tanks on this application.	Yes
Ercoupe	3468 & up Refer to ESM 43	415-48145 (Fuselage) Aluminum 6 gallon	No	<b>U-415-48145</b> <b>Currently Available</b>	<b>415-48186</b>	<b>415-48186</b> Currently Available	Yes
Ercoupe	0813-2622 Refer to ESM 39 3468 & up Refer to ESM 43 L/H 0813 & up R/H 3468-4423	415-48147-L/R (Wings) Aluminum 9 gallon	No	None	<b>415-48073</b>  <b>415-48183</b>	<b>To S/N 4423 w/ excep-</b> <b>tions – currently</b> <b>avail.</b> <b>S/N 4424 &amp; up – avail.</b> <b>610014-001 at</b> <b>owner's</b> <b>option - available</b>	Yes  No
Ercoupe	4424 & up Refer to ESM 39 And Ercoupe Parts Manual	415-48147-R (Wings) Aluminum 9 gallon	No	None	<b>415-48183</b>	<b>Currently Avail. or</b> <b>610014-001 (Thermos</b> <b>type) at owner's</b> <b>option</b>	No
Ercoupe	2623 & up (Univair built tank)	U-415-48145 (Fuselage) Aluminum 6 gallon	Yes	<b>Currently Available</b>	<b>415-48186</b>	<b>415-48186</b> Currently Available	Yes
Forney	All	F-48145 (Fuselage) Aluminum 6 gallon	Yes	<b>U-415-48145</b> <b>Currently Available</b>	F-48186	<b>415-48186</b> Currently Available	Yes
Forney	All	F-48147-L/R (Wings) Aluminum 9 gallon	No	None	F-48183	<b>415-48183</b> Currently Available	No
Alon	All	A48300-1/2 (Wings) Aluminum 9 gallon	No	None	F-48183	<b>415-48183 - Avail.</b> <b>610014-001 (Thermos</b> <b>type) at owner's</b> <b>option</b>	No
Alon	All	A48300-1/2 (Wings) Aluminum 9 gallon	No	None	F-48183 Modified per S.B. 8 (NLA)	Use <b>610014-001</b> – Thermos Type per Alon S.B. 16 Currently avail.	No
Alon	All	A48301 (Fuselage) Aluminum 6 gallon	No	<b>U-415-48145 or</b> <b>610181-501</b> based on installation Both currently available	<b>415-48186</b>	<b>415-48186</b> Currently Available	Yes
M-10	All	610182-501 (L Wing) Aluminum 9 gallon	Yes	<b>Currently Available</b>	<b>610014-001</b> (Thermos Type)	<b>610014-001</b> Currently Available	No
M-10	All	610182-503 (R Wing) Aluminum 9 gallon	Yes	<b>Currently Available</b>	<b>610014-001</b> (Thermos Type)	<b>610014-001</b> Currently Available	No
M-10	All	610181-501 (Fuselage) Aluminum 6 gallon	Yes	<b>Currently Available</b>	<b>610196-501</b>	<b>610196-501</b> Currently Available	Yes